CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
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Project Number
J1830

Project Title
Got Water?

Abstract

Objectives/Goals
The purpose of my experiment was to test which brand of water would be purest in terms of chemical levels, as well as by the amount of common bacteria present. I also tested which group of water (bottled water versus tap water, filtered water versus natural water, etc.) is the healthiest overall.

Methods/Materials
In order to complete my project, I needed 37 agar petri dishes for the 9 brands of water I tested. For each brand of water, I required 4 bottles for my sample size. To complete the chemical analysis, I needed 12 iron, nitrite, nitrate, phosphate, pH, and water hardness test strips. To swab the water onto the petri dishes, I required 74 double sided q-tips. Other materials included labels cups and sandwich bags. I would place a milliliter of water into each Petri dish to grow common bacteria. I would also put water test strips to analyze the amount of chemicals in the water.

Results
The results of my experiment were recorded in multiple ways. One way that I judged the purity of the water was through the number of bacteria that each sample grew. A second way was by noting the speed that the bacteria developed and the trends they showed. The last variable that I used to decide which brand was the best in purity was the chemical analysis of each water. All of the results showed that every water was at a healthy level, while some were healthier than others.

Conclusions/Discussion
In conclusion, many of the results reflect my hypothesis. Filtered water, that was not bottled, had the greatest bacteria counts. Municipal water had lower chemical levels than other brands, however they lacked beneficial levels of these chemicals. After completing a side project where I placed the bottles in a car for a week, I noted that there was a dramatic increase in phosphate levels when the bottles remained in a car. Foreign natural water and domestic natural water have very few differences between them, despite the #prestige# of foreign water. Bottled water has higher chemical levels than non-bottled water and also has terrible environmental impacts. Several bottled municipal water brands, such as Dasani and Aquafina had no bacteria colonies develop. This leads me to assume that there are contaminants in the water that kill these bacteria. In future years I hope to test the chlorine levels of these waters, which would account for the lack of bacterial growth.

Summary Statement
My project tested water purity of several different brands of water, as well as several sources of tap water.

Help Received
Parents bought the supplies